IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF NEW YORK

**********	Case No. 1:19-CR-00156 (MAD)
UNITED STATES OF AMERICA	GOVERNMENT'S SECOND SENTENCING MEMORANDUM
v.	(GUIDELINES ISSUES)
XIAOQING ZHENG,	
Defendant.	
**********	

The United States of America, by and through its counsel of record, the United States Attorney for the Northern District of New York, hereby files its second sentencing memorandum as a means of responding to the arguments / objections to the PSR's scoring of the sentencing enhancements raised by the defendant in his August 23, 2022 telephonic conference with Probation, his September 9, 2022 letter of objections, and his October 3, 2022 sentencing memorandum (*see* Dkt. No. 307).

Guidelines Provisions in the PSR

a. Specific Offense Characteristics

The PSR scores three sentencing enhancements which add a total of 22 levels to the offense level. First, the loss exceeded $1,500,000, but was less than $3,500,000 (sixteen levels),[1] per

1 As footnoted in the government's first sentencing memorandum, the government believes that the value of the GE trade secrets that the defendant conspired to steal and transmit to individuals in China as part of his conspiracy to commit economic espionage is far in excess of $3.5 million, however, the government does not object to the scoring of loss as set forth in ¶ 12 of the PSR.

U.S.S.G. § 2B1.1(b)(1)(I); PSR ¶ 12. Second, a substantial part of the fraudulent scheme was committed from outside of the United States and / or the offense involved sophisticated means and the defendant intentionally engaged in or caused the conduct constituting the sophisticated means (two levels), per U.S.S.G. § 2B1.1(b)(10)(B), (C); PSR ¶ 13. Third, the offense involved the misappropriation of a trade secret and the defendant knew or intended that the offense would benefit a foreign government or foreign instrumentality (four levels), per U.S.S.G. § 2B1.1(b)(14)(B); PSR ¶ 14. The defendant's adjusted offense level, as well as his total offense level, should be 28. PSR ¶¶ 19, 22.

b. Determination of Loss Amount Generally

U.S.S.G. § 2B1.1(b)(1) enhances fraud sentences based on "loss." The Guidelines define "loss" as "the greater of actual loss or intended loss." *Id*., cmt. n.3(A)(ii). "Actual loss" is the "reasonably foreseeable pecuniary harm that resulted from the offense," whereas "intended loss" is "the pecuniary harm that the defendant purposely sought to inflict." *Id*., cmt. n.3(A)(i), (ii). A defendant "is presumed to intend the natural and 'probable' consequences of one's acts." *United States v. Carboni*, 204 F.3d 39, 47 (2d Cir. 2000) (quoting *United States v. Jacobs*, 117 F.3d 82, 95 (2d Cir. 1997)).

It is the government who bears the burden of proving "the amount of loss – actual or intended – by a preponderance of the evidence." *United States v. Riccardi*, 989 F.3d 476, 481 (6th Cir. 2021). Loss need not be determined to an exact figure, rather, a "reasonable estimate" of the loss that a victim suffered or the amount of harm a defendant caused or intended to cause is sufficient. *United States v. Uddin*, 551 F.3d 176, 180 (2d Cir. 2009); U.S.S.G. § 2B1.1, cmt. n.3 (C). "A district court may make a reasonable estimate 'by extrapolating the average amount of loss

from known data and applying that average to transactions where the exact amount of loss is unknown.'" *Uddin*, 551 F.3d at 180 (quoting *United States v. Bryant*, 128 F.3d 74, 76 (2d Cir. 1997)).

In estimating a loss, the commentary to § 2B1.1 states that the estimate "shall be based on available information" and should take into account such factors as "(i) [t]he fair market value of the property unlawfully taken, copied, or destroyed; or, if the fair market value is impracticable to determine or inadequately measures the harm, the cost to the victim of replacing that property; (ii) [i]n the case of proprietary information (*e.g.,* trade secrets), the cost of developing that information or the reduction in the value of that information that resulted from the offense; (iii) [t]he cost of repairs to damaged property; (iv) [t]he approximate number of victims multiplied by the average loss to each victim; (v) [t]he reduction that resulted from the offense in the value of equity securities or other corporate assets; and (vi) [m]ore general factors, such as the scope and duration of the offense and revenues generated by similar operations." U.S.S.G. § 2B1.1 cmt. n.3(C)(i)-(ii).

c. Determination of Loss in Cases Involving Trade Secrets

Courts in multiple circuits have found that in cases involving trade secrets, the "'[i]ntended loss analysis, as the name suggests, turns upon how much loss the defendant actually intended to impose' on the victim, regardless of whether the loss actually materialized or was even possible." *United States v. Xue*, No. 16-22, 2020 U.S. Dist. LEXIS 173410, at *40-*42 (E.D. Pa. Sept. 22, 2020) (citing *United States v. Pu*, 814 F.3d 818, 824 (7th Cir. 2016)) (citations partially omitted).

d. Offenses in which a Substantial Part of the Scheme was Committed from Outside the United States, and Offenses Involving Sophisticated Means

U.S.S.G. § 2B1.1(b)(10)(B) enhances fraud sentences when "a substantial part of a

fraudulent scheme was committed from outside the United States." *Id*. Alternatively, U.S.S.G. § 2B1.1(b)(10)(C) enhances fraud sentences when "the offense otherwise involved sophisticated means and the defendant intentionally engaged in or caused the conduct constituting [the] sophisticated means." *Id*. The Guidelines define "sophisticated means" as "especially complex or especially intricate offense conduct pertaining to the execution or concealment of an offense." *Id*., cmt. n.9(B).

e. Offenses Involving the Misappropriation of a Trade Secret and Knowledge or Intent by the Defendant that the Offense Would Benefit a Foreign Government or Foreign Instrumentality

U.S.S.G. § 2B1.1(b)(14)(B) enhances sentences that involve the misappropriation of trade secrets if the "defendant knew or intended – (B) that the offense would benefit a foreign government, foreign instrumentality, or foreign agent . . ." *Id*.

Arguments in Support of the PSR's Scoring of the Enhancements

f. The PSR Correctly Values the Loss as Exceeding $1.5 Million but Less than $3.5 Million

The PSR found that the loss from the count of conviction exceeded $1,500,000, but was less than $3,500,000, and that sixteen levels should be added to the offense level. U.S.S.G. § 2B1.1(b)(1)(I); PSR ¶ 12. The PSR appears to base, in large part, the loss amount on the research, design, and development costs incurred by GE in its creation of the trade secrets unlawfully stolen and transmitted by the defendant as part of his conspiracy to commit economic espionage. *See id*. The PSR's loss valuation is actually supported in two ways.[2] First, the research and

2 *See e.g.,* General Electric Company Victim Impact Statement of October 7, 2022 (hereinafter "GE VIS"). The GE VIS details how the GE turbine trade secrets that the defendant stole and transmitted as part of his conspiracy to commit economic espionage (i) were some of the fruits of GE investing billions of dollars and decades of time into the research, development, and design of the trade secrets, and (ii) involved GE turbine parts and technologies that helped play a role in GE's profit margins arising from the sale of parts and services.

development (R&D) costs incurred by GE for the trade secrets at issue are, at a minimum, in the millions, and tens of millions, of dollars. These R&D costs are reflected in the testimony of the government's witnesses, the government's trial exhibits, and the GE VIS. Second, an estimate of GE's anticipated lost profits, based on evidence from GE, when combined with the defendant's business plans and projected profits for his Chinese companies, indicates millions of dollars in losses were intended by the defendant.[3]

(1) The June 6, 2017 E-Mail Theft

On June 6, 2017, the defendant furthered his conspiracy to commit economic espionage by stealing two digital GE trade secret files ("cutting teeth- 109E8755.pdf" and "cutting teeth-117E5611.pdf") that contained manufacturing drawings for turbine blades used in certain GE ground-based gas turbines, such as the 7F class gas turbine. GE-34(a)-(c), (e)-(f); Tr. at 911-931.[4]

GE mechanical engineer John Intile testified at trial that millions of dollars goes into the research and development of GE gas turbine blades. Tr. at 886-87. Mr. Intile also testified that (i) any person who possessed the manufacturing drawing of the particular blade depicted in file

3 As the Second Circuit held in *Jacobs*, a defendant "is presumed to intend the natural and 'probable' consequences of one's acts." *Jacobs*, 117 F.3d at 95. Once the defendant, Mr. Zhang, and their Chinese companies were in possession of GE's trade secrets surrounding GE's turbine technologies, the defendant and his Chinese companies could then research, design, and manufacture (in China) GE-caliber turbine parts with less time, effort, and expense than GE could. Then, once the defendant and his Chinese companies had GE-caliber turbine parts in their inventory, they could sell those parts, at prices that undercut GE, to customers in China who possessed GE turbines and were in need of replacement parts. The natural and probable consequences of such a scheme are that GE would lose what were very profitable sales of replacement turbine parts to customers in China. In other words, the evidence shows that as the defendant sought to research, design, manufacture, and sell turbine parts based on the GE trade secrets that he unlawfully stole or transmitted to China, the defendant intended to take some of GE's existing sales and profits, thereby intending to cause GE to lose sales and profits.

4 The defendant perpetrated this particular theft by first encrypting (with only a password that he knew) the GE trade secret files using the "Axcrypt" program, then using steganography to hide the trade secret files inside of the code of an otherwise innocuous looking digital picture of some bamboo shoots, and then e-mailing the digital picture (which contained the stolen GE trade secret files inside) to his personal Hotmail e-mail account. *See* GE-31(b).

"cutting teeth- 109E8755.pdf" could manufacture the blade just as GE does, and (ii) there are thousands of GE F class gas turbines currently in service that use the blade depicted in the aforementioned manufacturing drawing. Tr. at 911-15, 926, 931. Mr. Intile further testified that a competitor would have to spend "tens of millions of dollars" to figure out the information contained in the two aforementioned manufacturing drawings stolen by the defendant in furtherance of his conspiracy to commit economic espionage. Tr. at 929-30.

As noted in the GE VIS, the Stage 2 gas turbine blades contained in GE trade secrets "cutting teeth- 109E8755.pdf" and "cutting teeth- 117E5611.pdf" "are some of the most technically advanced and expensive components of the gas turbine." *See id*. at p. 2. GE "spent millions of dollars and thousands of hours on the design and development of the Stage 2 blade [and DLN nozzle][5] . . . technology." *Id*. The blades are currently operating in over 500 GE 7FA.02 and 7FA.03 F-class gas turbines across the globe, and the blades need to be replaced every three to seven years. *Id*. GE's annual revenue from the sale of these Stage 2 blades averages between $25 million and $35 million. *Id*. Even if GE was to lose only 10% of the annual sales from these blades, GE would lose, over a span of ten years, millions of dollars in lost profits. *Id*.

(2) The August 22, 2017 E-Mail Transmission

On August 22, 2017, the defendant furthered his conspiracy to commit economic espionage by transmitting a stolen GE trade secret file ("2-U8668.pdf") to co-conspirator Zhaoxi Zhang (a/k/a "Mr. Zhang") who was located in China. GE-35(a)-(b), (d), GE-31(c). GE trade secret file "2-U8668.pdf" contained a manufacturing drawing of a brush seal used in various GE steam turbines (such as the A650, D600 & D650 models). Tr. at 706-18.

5 The DLN fuel nozzles are one of the subjects of the defendants October 23, 2017 e-mail theft.

GE mechanical engineer Sean Feeny testified at trial that GE steam turbines, like the A650, D600 & D650 models, rely on technologies and parts that have been researched, designed, developed and tested over a span of decades and involved hundreds of people and millions of dollars. Tr. at 678-79. Mr. Feeny also testified that (i) any person who possessed the manufacturing drawing of the particular brush seal depicted in file "2-U8668.pdf" could manufacture the brush seal just as GE does, and (ii) the brush seal has a retail sales price of "likely tens of thousands" of dollars. Tr. at 710, 721.

As noted in the GE VIS, the U8668 steam turbine brush seal as contained in GE trade secret "2-U8668.pdf" is one of the many[6] turbine parts that is a "direct result of GE's tens of millions of dollars and thousands of hours of investment into research and development." *See id*. at p. 2.

(3) The September 1, 2017 E-Mail Transmission

On September 1, 2017, the defendant furthered his conspiracy to commit economic espionage by transmitting seven stolen GE trade secret computer-aided design (CAD) files to Mr. Zhang who was located in China. GE-36(a)-(c), GE-31(d). Four of the CAD files related to various aspects of seal testing rigs, and three of the CAD files related to an aviation turbine aspirating face seal. *See id*.; Tr. 1030-43, 1082-87.

GE mechanical engineer Rahul Bidkar testified at trial that the four test rig files included file "15.2 CLS.x_t" which is a CAD model of the "Leap Rig" seal testing rig currently in use at GE Global Research in Niskayuna, New York, and as depicted in GE-12(u). Tr. at 1032-33,

6 Although the GE VIS does not give a break down by turbine part or component (*e.g.,* the U8668 brush seal, the DLN fuel nozzle, the Stage 2 blades, etc.), the VIS is clear that, collectively, GE invested tens of millions of dollars and thousands of hours of manpower into researching, developing, and designing these turbine parts that are currently in use in GE turbines around the globe. And, most significantly, all of the aforementioned turbine parts trade secrets are part of the defendant's conspiracy to commit economic espionage.

1082. This particular file gives the dimensions and geometry of the "Leap Rig" which is a special seal testing rig because of its ability to replicate the conditions inside of a GE ground turbine or aviation turbine. Tr. at 1040, 1082-83. Dr. Bidkar further testified that every year GE spends millions of dollars in developing seal technologies for its turbines. Tr. at 983.

According to the GE VIS, the "Leap Rig" seal testing rig (as contained in GE trade secret file "15.2 CLS.x_t") took GE's Global Research Center in Niskayuna, NY "many years to design, build and refine," and is part of the "millions of dollars" that GE spends annually to develop and improve "its turbine seal technologies." *Id*. at p. 3.

Dr. Bidkar also testified that the three aspirating face seal files included file "4013498-057AA-0_6.x_t" which is a CAD model of an aspirating face seal that GE had been developing for over 20 years, and ended up being used in GE's aviation engines. Tr. at 1040, 1084-85. This file gives the dimensions and geometry of the seal down to 1/1000th of an inch. Tr. at 1041-42. And, with respect to the aspirating face seal contained within CAD file "4013498-057AA-0_6.x_t", Dr. Bidkar estimated that the seal in its final form has a retail sales price of somewhere between $50,000 and $100,000 per seal. Tr. at 1086-87.

(4) The October 23, 2017 E-Mail Theft

On October 23, 2017, the defendant furthered his conspiracy to commit economic espionage by stealing several GE trade secret CAD files (including file "dln20512.prt") that contained design drawings for various gas turbine combustion chamber parts, to include the fuel nozzle used in certain GE ground-based gas turbines, such as the 7F class gas turbine. GE-36(a)-(d), (e)-(g); Tr. at 939-945, 970-71.[7] In particular, GE mechanical engineer John Intile testified

7 The defendant perpetrated this particular theft by first encrypting (with only a password that he knew) the GE

at trial that CAD file "dln20512.prt" contains a drawing for an older fuel nozzle used in GE's model 7F gas turbines, as well as some model 6 and 9 gas turbines. Tr. at 939-45. Mr. Intile also testified that the fuel nozzle described in the aforementioned CAD file is in use in some of GE's gas turbines operating in the 2016-2018 timeframe. *Id*. When asked at trial to describe the amount of resources GE spent in researching, designing and developing the aforementioned fuel nozzle, Mr. Intile testified that developing the fuel nozzle would have "require[d] a team of engineers across combustion and across testing and across manufacturing." Tr. at 944. Mr. Intile further testified that it would be difficult for a competitor to recreate the "dln20512.prt" file. *Id*.

The GE VIS amplifies Mr. Intile's testimony and explains how gas turbine fuel nozzles, like the fuel nozzle contained in GE trade secret CAD file "dln20512.prt", enable the "turbines to meet legal standards regarding emissions . . ." *See id*. at p. 2. The VIS also notes that GE has spent "millions of dollars and thousands of hours on the design and development of [both] the Stage 2 blade and DLN [fuel] nozzle technology." *Id*. While the VIS acknowledges that the parts and service market for GE's DLN fuel nozzles is significantly smaller than the market for its Stage 2 blades, the "market nevertheless still represents millions of dollars of profitable business each year" for GE. *Id*. at p. 3.

trade secret files using the "Axcrypt" program, then using steganography and hiding the digital files inside of the code of otherwise innocuous looking digital pictures of gas turbines, and then e-mailing the digital pictures (which contained the stolen GE trade secret files inside) to his personal Hotmail e-mail account. *See* GE-31(g).

(5) The Defendant's Business Plans Relating to His Chinese Companies, LTAT & NTAT, Reflect that the Companies Were Focused on Researching, Designing, and Producing Steam and Gas Turbine Parts Which Would Bring Significant Government Funding, Sales Revenues, and Profits to the Defendant

Many of the turbine parts and technologies of which the defendant's Chinese companies, LTAT and NTAT, were researching, designing, and manufacturing are strikingly similar to the turbine parts and technologies connected to the GE trade secrets that are part of the defendant's conspiracy to commit economic espionage.

As one example, in LTAT's 2017 Project Initiation Application submitted to the Liaoning Province Committee of Industry & Information Technology, the defendant and Mr. Zhang sought hundreds of millions of Chinese Yuan in funding from the Liaoning Provincial government for LTAT's main turbine parts products, including steam turbine brush seals. *See* GE-55(b) at pp. 1, 6, 8, 13, 20. In the Project Initiation Application, the defendant and Mr. Zhang highlighted how financially lucrative the turbine parts market is when they wrote that the "[c]ost of seals for a large advanced steam turbine is around 300 to 600 thousand USD. Therefore, its seal market has great potential." *Id*. at p. 8.

As another example, in NTAT's 2017 "Business Proposal" for "Research and Development Plan of the Key Technology of Mechanical Sealing for Engines," the defendant sought millions of Chinese Yuan in funding and grants from the government of China to assist with the company's plans for the growth of its turbine parts business. *See* GE-56(d) at pp. 1, 22. In "Phase one" of the business proposal, NTAT planned to research and develop seals to be used in steam and gas turbines, such as metal brush seals and non-contact gas film seals (a/k/a aspirating face seals). *Id*. at p. 3. The business proposal notes that GE has a large share of the gas turbine

market and that "GE's gas turbine production accounts for about 53% of the world's total production . . ." *Id*. at p. 9.

The defendant clearly realized that turbine owners want turbine parts that perform just as the parts manufactured by the original seller of the turbine. In the NTAT "Business Proposal" the defendant wrote "the marketing cycle for steam turbine and gas turbine sealing products is very short, especially in the repair market. Products can be launched in the market directly once they pass the original equipment manufacturer (OEM) verification. Therefore, the ground engine area is the focus of initial development. The ground engine business will be used to support the aero-engine development, and the company will then be expanded with the aero-engine business." *Id*. at p. 15. And, similar to the LTAT Project Initiation Application, the NTAT "Business Proposal" notes that China's steam turbines account for about a quarter of the world's total, and that the "cost of sealing for a large advanced steam turbine is between US$300,000 and US$600,000. Therefore, the seal market has great potential!" *Id*. at p. 16.

Additionally, in the "Profit Model" section of the NTAT business proposal, the defendant indicated that he was looking to make a "15% net profit" on the sale of turbine parts, "[w]ith the principle of taking over the market in large quantities . . ." *Id*. at p. 18. Finally, a review of the business proposal's financial "Goals by Phase" and "Three-Year Financial Plan" shows that the defendant forecast net profits for NTAT in 2017, 2018 and 2019 of 800,000, 2,500,000, and 4,000,000 Yuan, respectively. *Id*. at pp. 21-22.

The above examples focus on brush seals and aspirating face seals which were only a portion of the GE trade secrets that the defendant stole or transmitted to China as part of his

conspiracy to commit economic espionage.[8] Regrettably for GE, the GE trade secrets involving gas turbine fuel nozzles and blades, which the defendant also stole as a part of his conspiracy to commit economic espionage, are likely more valuable, and bring greater profits to GE's parts and service business than the brush seals and aspirating face seals described above.

Collectively, the GE trade secrets that formed the basis of the defendant's conspiracy to commit economic espionage involved (i) research and development costs well in excess of $1.5 million, and (ii) anticipated or intended lost profits well in excess of $1.5 million. For those reasons, the loss calculation found in paragraph 12 of the PSR is well supported.

(g) The PSR Correctly Found that a Substantial Part of the Fraudulent Scheme was Committed from Outside of the United States, and that the Offense Involved Sophisticated Means and the Defendant Intentionally Engaged in or Caused the Conduct Constituting the Sophisticated Means

The PSR found that a substantial part of the fraudulent scheme was committed from outside of the United States and / or the offense involved sophisticated means, that the defendant intentionally engaged in or caused the conduct constituting the sophisticated means, and that two levels should be added to the offense level. U.S.S.G. § 2B1.1(b)(10)(B), (C); PSR ¶ 13. The PSR appears to base the scoring of this enhancement on evidence that (i) a substantial part of the scheme was committed from the People's Republic of China (PRC), and (ii) the offense involved encryption and decryption of trade secrets, steganography, the sending of GE trade secrets to China, and co-conspirators using encrypted text messages and audio files to communicate with

8 The defendant's ambitions were clearly not limited to just selling brush seals and aspirating face seals, rather, the defendant envisioned LTAT as producing multiple different turbine parts for ground based steam and gas turbines, and then also producing parts for aviation turbines. *See e.g.*, GE-39(ll), a December 22, 2017 WeChat string between the defendant and Mr. Zhang in which the defendant wrote (i) "Development of all types of models must continue. Once we gain market share for a few engine models, then there will be security. We will first go into steam turbines and ground gas turbines." and (ii) "Aerospace profits run above 20% on average."

one another. *See id*.

The evidence admitted at trial established that a sizeable portion of the defendant's scheme was committed through individuals, entities, and actions that were based in China. During the window of the conspiracy (2016-2018) the defendant made regular trips from the United States to China in order to work on / with his Chinese companies (LTAT and NTAT). GE-18(a), (b). The defendant's main co-conspirator, Mr. Zhang, was living in China at the time of the offense. The defendant's two companies (LTAT and NTAT) that were used to research, design, and manufacture the turbine parts and technologies as contained in the GE trade secrets unlawfully stolen or transmitted to China by the defendant, were based in China. GE-20(b), GE-21(a), GE-20(c), GE-56(d).

Additionally, the defendant transmitted, via e-mail, at least eight different electronic files containing GE's stolen trade secrets to Mr. Zhang, who was located in China. *See* GE-35(a)-(b), (d), GE-31(c) (the August 22, 2017 e-mail transmission of the brush seal file "2-U8668.pdf" from the defendant's Hotmail account to Mr. Zhang's qq.com account), and GE-36(a)-(c), GE-31(d) (the September 1, 2017 e-mail transmission of seven CAD files from the defendant's Hotmail account to Mr. Zhang's qq.com account).

The defendant communicated regularly with Mr. Zhang (who was located in China) over the WeChat communication platform. In some of the WeChats, the defendant and Mr. Zhang discussed stolen GE trade secrets that the defendant had transmitted to China, and in others the two discussed ways in which their Chinese companies could benefit the government of China. *See e.g.,* GE-39(cc), (dd) (September 1, 2017 WeChats in which the defendant, after e-mailing the seven stolen GE trade secret CAD files to Mr. Zhang, instructed Mr. Zhang to "delete everything.

Don't leave it in the mailbox."); GE-39(u) (January 22, 2017 WeChat in which the defendant and Mr. Zhang discussed remarks that the defendant planned to give to various Chinese Communist Party leaders in an effort to obtain the leaders' financial support for the defendant's Chinese company LTAT).

The evidence admitted at trial also established that the offense involved sophisticated means, and that the defendant intentionally engaged in the conduct constituting the sophisticated means. As noted earlier in this memorandum, the defendant, in an effort to further his conspiracy, on at least two occasions (June 6, 2017 and October 23, 2017), stole GE trade secrets involving gas turbine blades and gas turbine combustion chamber parts, to include fuel nozzles, by using a crafty and sophisticated combination of a personal e-mail account (Hotmail), file encryption (Axcrypt), and steganography. GE-31(b), GE-34(a)-(c), (e)-(f), GE-31(g), GE-36(a)-(d), (e)-(g).[9]

(h) The PSR Correctly Found that the Offense Involved the Misappropriation of a Trade Secret and that the Defendant Knew the Offense Would Benefit a Foreign Government or Foreign Instrumentality

The PSR found that the offense of conviction involved the misappropriation of a trade secret, that the defendant knew or intended that the offense would benefit a foreign government or foreign instrumentality, and that four levels should be added to the offense level. U.S.S.G. § 2B1.1(b)(14)(B); PSR ¶ 14. The PSR appears to base the scoring of this enhancement on evidence that the defendant and his co-conspirators schemed to steal and transmit GE's trade secrets to China, and that they did so knowing and intending that the unlawful thefts and transmissions to China would benefit the PRC and a variety of entities, to include, Shenyang Aerospace University,

9 In addition, and as already noted, the defendant regularly communicated about the offense of conviction with Mr. Zhang via the WeChat platform which is an encrypted communications platform beyond the jurisdiction of U.S. law enforcement.

Shenyang Aeroengine Research Institute, and Huaihai Institute of Technology.[10] *See id*.

The defendant and Mr. Zhang, through their Chinese companies LTAT and NTAT, sought to benefit the PRC, its provinces (particularly Liaoning Province and Jiangsu Province), and some of the PRC's major public research universities / instrumentalities (particularly Shenyang Aerospace University, Shenyang Aeroengine Research Institute, Huaihai Institute of Technology, and the Beijing University of Aeronautics and Astronautics),[11] by providing turbine technologies and products that would improve China's organic abilities to research, develop, design, and manufacture turbine technologies and products. And, in return for providing the turbine technologies and products that the PRC sought, the defendant and Mr. Zhang hoped that the PRC's government, provincial governments, and Chinese Communist Party leaders would provide financial and economic incentives to themselves and their Chinese companies (LTAT & NTAT).

Government's Sentencing Recommendation

For the reasons argued above, the government maintains that the PSR correctly scores the offense of conviction and applicable sentencing enhancements. The total offense level is 28, and the defendant's criminal history category is one. PSR ¶¶ 22, 28.[12] The government respectfully requests that the Court sentence the defendant to (i) a term of imprisonment of 97 months; (ii) a

10 As the Sentencing Commission noted in Amendment 771 to the aforementioned enhancement, ". . . cases involving economic espionage (i.e., trade secret offenses that benefit foreign governments or entities under the substantial control of foreign governments) are particularly serious. In such cases, the United States is unlikely to obtain a foreign government's cooperation when seeking relief for the victim, and offenders backed by a foreign government likely will have significant financial resources to combat civil remedies. In addition, a foreign government's involvement increases the threat to the nation's economic and national security."

11 At trial, Professor Chen testified that Shenyang Aerospace University, Shenyang Aeroengine Research Institute, Huaihai Institute of Technology, and the Beijing University of Aeronautics and Astronautics were all public universities or research institutes administered or overseen by the PRC, the Chinese Communist Party, or various provincial governments. Tr. at 1110-1122.

12 The sentencing guidelines advise that the defendant receive a sentence of (i) imprisonment between 78 and 97 months; (ii) one to three years of supervised release; and (iii) a fine of between $25,000 and $5,000,000. PSR ¶¶ 51, 55, 60.

term of supervised release of three years with the special conditions recommended by the United States Probation Office; and (iii) a fine of $500,000.00.

The defendant is a thief whose sneaky and devious actions were motivated by greed for money. In his quest for riches, the defendant betrayed his employer, GE, and his country, the United States. His scheme was perpetrated to not only enrich himself and his Chinese companies, but in order to benefit the PRC's ability to research, develop, design, test, and manufacture turbine technologies and parts. The defendant's scheme hurt GE, our nation's economic security, and by extension, our national security. A firm sentence is needed to punish the defendant, protect society from the defendant, reflect the seriousness of the defendant's crime, promote respect for the rule of law, and deter both the defendant and others from perpetrating similar crimes.

Respectfully submitted this 11th day of October, 2022,

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